COURSE SUMMARY: Algorithm design paradigms; mathematical analysis of algorithms; design and analysis of graph algorithms.

PREREQUISITE: CSE 680 or equivalent.


COURSE NOTES (required) : Order from SBX (or directly from [www.zippublishing.com](http://www.zippublishing.com)).

CARMEN: [https://carmen.osu.edu](https://carmen.osu.edu)

SEQUENCE OF TOPICS (tentative):
1. Algorithm analysis (CLRS, Chapter 1,2,3);
2. Dynamic programming (Chapter 15);
3. Greedy algorithms (Chapter 16);
4. Recurrence relations (CLRS, Chapter 4);
5. Amortized analysis (CLRS, Chapter 17);
6. Disjoint set operations (CLRS, Chapter 21);
7. Probabilistic analysis, quicksort and median find (CLRS, Chapters 5,7,9);
8. Representation of graphs (CLRS, Section 22.1);
   Minimum spanning trees (CLRS, Chapter 23);
9. Shortest paths (CLRS, Chapters 24 & 25);
10. NP-complete problems, approximation algorithms and public key cryptosystems (CLRS, Section 34.5, 35.2, 31.7).

(over)
GRADING: HW 25%, Midterm 35%, Final 40%.
(or Midterm 20% and Final 55%, whichever is greater.)

Midterm: Tuesday, Feb. 7, at 7:00-9:00 p.m. in 239 Journalism Building.
Final: Thur, March 15, 9:30-11:18 a.m. in 412 Bolz.

Homeworks may include programming assignments.

Students are expected to attend class regularly. In the event that a student must miss a class, the student is responsible for finding out what assignments were made, what due dates were announced, and what material was covered. Late homework will NOT receive credit.